Doc Code: AP.PRE.REQ

PTO/SB/33 (07-05)
Approved for use through xx/xx/200x. OMB 0651-00xx
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional): 1875.0250001

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]

on _____

Signature _____

Typed or printed name _____

Application Number	Filed
09/722,077	November 27, 2000

First Named Inventor: Juin-Hwey CHEN

Art Unit	Examiner
2655	Michael N. Opsasnick

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☒ attorney or agent of record.
Registration number 43,610

☐ attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____

Signature

Thomas C. Fiala
Typed or printed name

(202) 371-2600
Telephone number

2/24/06
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:
Juin-Hwey CHEN
Appl. No.: 09/722,077
Filed: November 27, 2000
For: **Method and Apparatus for One-Stage and Two-Stage Noise Feedback Coding of Speech and Audio Signals**

Confirmation No.: 3566
Art Unit: 2655
Examiner: Michael N. Opsasnick
Atty. Docket: 1875.0250001

Arguments to Accompany the Pre-Appeal Brief Request for Review

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Mail Stop: AF

Sir:

Applicant hereby submits the following Arguments, in five (5) or less total pages, as attachment to the Pre-Appeal Brief Request for Review Form (PTO/SB/33). A Notice of Appeal is concurrently filed.

Arguments

Applicant's arguments in the Amendment and Reply under 37. C.F.R. § 1.111, filed in response to the Office Action issued May 24, 2005, were not properly considered or responded to by the Examiner in the final Office Action issued November 2, 2005 ("Office Action"). In particular, the Examiner's response was legally and factually deficient because the Examiner failed to adequately show where the cited reference teaches or suggests combining a residual signal with a noise feedback signal to produce a quantizer input signal, as recited by each of the independent claims.

For a rejection to be legally adequate under 35 U.S.C. § 102, every claim limitation must be taught in a single reference. *Industries, Inc. v. Guardian Industries Corp.*, 75 F.3d 1558, 1566 (Fed. Cir. 1996). The absence of any claimed element from

the reference negates anticipation. *Atlas Powder Co. v. E.I. du Pont de Nemours & Co.*, 750 F.2d 1569, 1574 (Fed. Cir. 1984).

Claims 1, 28, 33 and 60 are the independent claims in this application. Independent claim 1 recites a method of coding a speech or audio signal that includes the step of "combining [a] residual signal with a first noise feedback signal to produce a predictive quantizer input signal" and independent claim 33 recites an apparatus that is adapted to perform this function. Independent claim 28 recites a method of coding a speech or audio signal that includes the step of "combining [a] residual signal with a noise feedback signal to produce a quantizer input signal" and independent claim 60 recites an apparatus that is adapted to perform this function.

The Examiner has rejected each of independent claims 1, 28 and 33 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,487,086 to Bhaskar ("Bhaskar"). In rejecting these claims, the Examiner has asserted that various elements illustrated in FIG. 2 of Bhaskar perform the recited function of combining a residual signal with a noise feedback signal to produce a quantizer input signal. However, as will be explained below, Bhaskar does not teach or suggest or this feature, and thus the Examiner's continued rejections based on 35 U.S.C. § 102(b) are legally and factually deficient.

1. Bhaskar Teaches An "Open Loop" Speech Coder That Avoids the Use of a Noise Feedback Signal

In the Background section of Bhaskar, a conventional adaptive predictive codec is described that includes a noise feedback loop. In particular, in accordance with FIG. 1 of Bhaskar, a residual signal is "quantized inside a feedback loop which filters the quantization noise through a noise shaping filter 1 and sums the result using adder 2 with the residual to form the quantizer input." *See* Bhaskar, col. 2, ll. 40-44 and FIG. 1.

Having described a conventional codec that includes a noise feedback loop, Bhaskar goes on to state why such a configuration should not be used:

> There are two main disadvantages to the [Noise Feedback Quantization] scheme. First, due to the noise feedback, the variance of the quantizer input signal is higher than the variance of the residual. This is especially true due to the low rate of quantization. As a result, the performance of the quantizer, referenced to the residual variance will be reduced. Secondly, and more significantly, the feedback loop may become unstable if the power gain through the feedback filter becomes large. This can occur during signals of large spectral dynamic range such as sinusoids and resonant voiced sounds. Controlling the stability by limiting the power gain usually results in a loss in the overall performance of the codec.

See Bhaskar, col. 2, ll. 56-67.

Having stated that the conventional noise feedback loop configuration of FIG. 1 leads to an increase in the variance of the residual and instability, Bhaskar then describes an alternative "open loop" approach, referred to as "Transform Domain Vector Quantization" (TVQ), that avoids these issues. *See* Bhaskar, col. 3, ll. 43-49. This approach, which is embodied in FIGS. 2 and 3 of Bhaskar, is referred to as "open loop" because it does not include a noise feedback loop or use a noise feedback signal. The Examiner himself has conceded that Bhaskar teaches an open loop structure. *See* Office Action at p. 4.

In view of the foregoing, it is clear that the Examiner's assertion that FIG. 2 of Bhaskar teaches combining a residual signal with a noise feedback signal to produce a quantizer input signal is unfounded. As outlined above, the codec depicted in FIG. 2 of Bhaskar is an "open loop" codec specifically designed to avoid the use of a noise feedback loop or noise feedback signal.

2. There is no Structure in Bhaskar's Speech Codec that Performs the Function of Providing a Noise Feedback Signal

Furthermore, none of the structures in FIG. 2 identified by the Examiner as performing the step of combining a residual signal with a noise feedback signal to produce a quantizer input signal actually perform that step, either alone or in combination with each other. Each of these structures will now be addressed in turn.

FIG. 2, subblock 24: The Examiner has asserted that this structure combines a residual "with the quantized parameters to produce a predictive quantizer residual . . . along with the associated noise". *See* Office Action at p. 3. Subblock 24 performs no such function. Subblock 24 is a Discrete Cosine Transform (DCT) circuit that operates only to receive a residual signal and transform it from the time domain to the frequency domain. *See* Bhaskar, col. 3, ll. 25-28, col. 4, ll. 48-63. Thus, subblock 24 does not receive or operate on any "quantized parameters" or "associated noise".

FIG. 2, subblock 23: The Examiner has further asserted that subblock 23 of FIG. 2 "teaches noise masking in the calculation of the noise coefficient." *See* Office Action, at p. 3. As an initial matter, this statement is incorrect—the only structure in Bhaskar that uses a noise masking parameter is quantizer circuit 28, which uses a fixed noise masking parameter ß as a weighting factor in selecting an optimal quantization codevector. *See* Bhaskar, col. 6, ll. 50-55. However, the use of a fixed noise masking parameter in this fashion bears no relation to the claimed feature of combining a residual signal with a noise feedback signal to produce a quantizer input signal. For example, the fixed noise masking parameter is not a signal and it is not "fed back" from any other portion of the codec depicted in FIGS. 2 and 3 of Bhaskar.

FIG. 2, subblocks 25, 26 and 28: The Examiner has also asserted that subblocks 25 and 26 teach "using an improved 'noise feedback' for the power spectral calculations

based on the short term and long term parameters . . . and noise shaping in subblock 28." Contrary to the Examiner's assertion, Bhaskar merely teaches that circuit 26 supplies an estimate of the input signal power to circuit 25 so that circuit 25 can perform equations relating to how transform coefficients are grouped into vectors for vector quantization. *See* Bhaskar, col. 5, ll. 47-49. The short and long term prediction parameters associated with short term predictor 21 and long term predictor 22 are used to derive the necessary equations. However, the use of prediction parameters in this fashion has nothing to do with combining a residual signal with a noise feedback signal to produce a quantizer input signal as recited in the independent claims. For example, the short and long term prediction parameters are not noise signals and they are not "fed back." Furthermore, as noted above, the use of a predefined noise masking parameter ß by quantizer circuit 28 also bears no relation to this limitation.

3. Conclusion

In view of the foregoing, Applicant respectfully requests reconsideration and withdrawal of the rejections under 35 U.S.C. § 102(b) over Bhaskar.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

Thomas C. Fiala
Attorney for Applicant
Registration No. 43,610

Date: 2/24/06

1100 New York Avenue, N.W.
Washington, D.C. 20005-3934
(202) 371-2600

500383_1.DOC